

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Rappaport

Confirmation No. 1149

Serial No. 09/633,122

Group Art Unit 2123

Filed August 4, 2000

Examiner Ayal Sharon

For METHOD AND SYSTEM FOR DESIGNING OR DEPLOYING A  
COMMUNICATIONS NETWORK WHICH ALLOWS  
SIMULTANEOUS SELECTION OF MULTIPLE COMPONENTS

Box Non-Fee Amendment  
Commissioner for Patents  
PO Box 1450  
Alexandria, Virginia 22313-1450

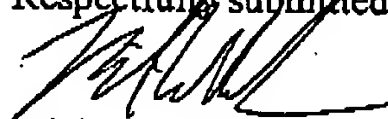
Facsimile Transmission of Copies of Pages of Applicant File  
VIA FACSIMILE ON JANUARY 13, 2005 TO 571-273-3714

Sir:

Pursuant to our telephone call today, attached are copies of the following  
from the file for the Applicant as maintained by the undersigned.

- 1) A copy of the action mailed by the USPTO September 16, 2004
- 2) A copy of the front page of the Response to Requirement for Information filed  
October 12, 2004
- 3) A copy of the date stamped receipt showing the Response to Requirement for  
Information was filed simultaneously with a Re-Submission of Amendment.

Respectfully submitted,



Michael E. Whitham  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,122	08/04/2000	Theodore Rappaport	02560034aa	1149
30743	7590	09/16/2004	EXAMINER	
WHITHAM, CURTIS & CHRISTOFFERSON, P.C. 11491 SUNSET HILLS ROAD SUITE 340 RESTON, VA 20190			SHARON, AYAL I	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SEP 21 2004



UNITED STATES DEPARTMENT OF COMMERCE  
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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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EXAMINER

ART UNIT

PAPER

9

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The reply filed on 06/14/2004 is not fully responsive to the prior Office Action because of the following omission(s) or matter(s): The response does not address the 37 CFR 1.105 Requirement for Information that accompanied the Office Action. See 37 CFR 1.111.

The USPTO's internal records show that the Requirement for Information ("Rule 105") was mailed on the same date as the Office Action, 03/15/2004. In a telephone conversation conducted on 08/10/2004, Carrie Atkins, assistant to Applicant's Representative Mr. Michael Whitham, Reg. No.32,635 said that the 1.105 and other attachments were not received with the Office Action. All of the documents mailed on 03/15/2004 (with the exception of the prior art cited in the 892 form - which was addressed by the Applicant in the above-mentioned reply) are therefore being re-mailed with this notice.

Since the above-mentioned reply appears to be *bona fide*, applicant is given **ONE (1) MONTH or THIRTY (30) DAYS** from the mailing date of this notice, whichever is longer, within which to supply the omission or correction in order to avoid abandonment. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).**

*[Signature]*  
 KEVIN J. TESKE  
 SUPERVISORY  
 PATENT EXAMINER

**Office Action Summary**

Application No.

09/633,122

Applicant(s)

RAPPAPORT ET AL.

Examiner

Ayal I Sharon

Art Unit

2123

~ The MAILING DATE of this communication appears on the cover sheet with the correspondence address ~

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3,4,5.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Requirement for Info 37 CFR 1.105

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## DETAILED ACTION

### *Introduction*

1. Claims 1-15 of U.S. Application 09/633,122 filed on 08/04/2000 are presented for examination.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7-11, and 13-15 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention.
4. The "SMT Plus" product, later renamed as "SitePlanner", was on sale more than one year prior to the date of application of patent in the U.S.
5. The prior art used for these rejections is as follows:
  - a. "SMT Plus: Site Modeling Tool. A Software Tool for Planning Indoor Wireless Systems." © 2001. Printed from <http://www.mprg.org/research/smt/smt.shtml> on 3/5/04. (Referred to in this document as "SMT Plus").

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- b. Rappaport, T., et al. SitePlanner™ 3.0 User's Manual. Wireless Valley Communications. © 1998. (Referred to in this document as "SitePlanner 3.0").
- c. "Wireless Research Leads to Indoor Planning Tool." EE Connection, Feb. 1997. Printed from <http://www.ecpe.vt.edu/ecenews/feb97/smt.html> on 3/5/04. (Referred to in this document as "EE Connection").
- d. "Communication Products Special Section." EDN Access, Aug. 1, 1996. Printed from <http://www.e-insite.net/ednmag/archives/1996/080196/16df1.htm> on 3/5/04. (Referred to in this document as "EDN Access").

6. The first page of the SMT Plus document contains the following quotation:

SMT Plus was developed at MPRG in the early 1990s from years of indoor/microcell propagation research at Virginia Tech. It is an early research predecessor to SitePlanner™ Tool Suite, the powerful commercial indoor/microcellular prediction & measurement system developed by Wireless Valley Communications, Inc. Please visit the Wireless Valley Communications, Inc. website to learn about the full capabilities of this powerful indoor/microcellular engineering and system management tool suite.

7. The EE Connection document, dated February 1997, teaches the following:

Research on indoor wireless propagation in the Department's Mobile and Portable Radio Research Group (MPRG) has led to the development of the first commercially available indoor/microcellular Site Modeling Tool. Called SMT Plus, the software helps planners with indoor site selection, system bidding and preliminary wireless system design.

8. The EDN Access document (p.2), dated Aug. 1, 1996, teaches the following:

Software tool for indoor wireless system

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SMT Plus 1.0 is an interactive software tool for planning, simulating, and installing indoor wireless systems. The program displays signal strength and interference contours on building blueprints for arbitrary base-station placements. Available for DOS, Windows, and a variety of Unix platforms, SMT Plus addresses all major wireless communication standards, including AMPS, IS-136, IS-95, and wireless LAN. \$2500. Virginia Polytechnic Institute and State University, Blacksburg, VA.

9. Claims 1-5, 7-11, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by SitePlanner™ 3.0 User's Manual.

10. In regards to Claim 1, Site Planner 3.0 teaches the following limitations:

1. A method for designing or deploying a communications network., comprising the steps of.

providing a computerized model which represents a physical environment in which a communications network is or will be installed, said computerized model providing a display of at least a portion of said physical environment;

(See Site Planner 3.0, especially: pp.7-11)

p.7 teaches that "First, BDM is used to scan in, create, or import drawing blueprints of the building or campus under study."

identifying a plurality of system components which may be used in said physical environment;

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems.

identifying at least one component kit composed of at least two system components of said plurality of system components,

(See Site Planner 3.0, especially: pp.97-99)

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pp.97-99, teach "Manipulating components in the Antenna System".

selecting either specific components from said plurality of system components or said at least one component kit for use in said computerized model; and

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems and subsystems.

representing said selected specific components or said at least two system components of said at least one component kit in said display as part of a communications network.

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

11. In regards to Claim 2, Site Planner 3.0 teaches the following limitations:

2. The method of claim 1 wherein said second identifying step includes the steps of

selecting said at least two system components from said plurality of system components identified in said first identifying step; and  
(See Site Planner 3.0, especially: pp.95-105)

Fig.5.12 (p.95) shows the editing of the components of an antenna system. Fig.5.15 shows the swapping of components in an antenna system. Fig.5.16 shows the connecting of a new component to an existing antenna system.

presenting said selected at least two system components as said at least one component kit in said display.

(See Site Planner 3.0, especially: pp.95-105)

Fig.5.12 (p.95) shows the editing of the components of an antenna system.

12. In regards to Claim 3, Site Planner 3.0 teaches the following limitations:

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3. The method of claim 2 wherein more than one component kit is presented in said presenting step.  
(See Site Planner 3.0, especially: pp.95-105 and Fig.5.12)

p.95 says that "Any number of antennas, amplifiers, connectors, splitters, cables, and any other component from the bill of materials can be graphically positioned within the drawing database to form the antenna system for a given transmitter."

13. In regards to Claim 4, Site Planner 3.0 teaches the following limitations:

4. The method of claim 2 wherein more than two system components are in said at least one component kit.  
(See Site Planner 3.0, especially: pp.95-105 and Fig.5.12)

p.95 says that "Any number of antennas, amplifiers, connectors, splitters, cables, and any other component from the bill of materials can be graphically positioned within the drawing database to form the antenna system for a given transmitter."

14. In regards to Claim 5, Site Planner 3.0 teaches the following limitations:

5. The method of claim 1 further comprising the step of generating a bill of materials containing cost information for said selected specific components or said at least two system components of said at least one component kit utilized in said communications network.  
(See Site Planner 3.0, especially: pp.89-91 "Bill of Materials")

Fig.5.9, on p.91, has a field for "Cost(US\$)"

15. In regards to Claim 7, Site Planner 3.0 teaches the following limitations:

7. The method of claim 1 wherein said system components have performance attributes associated with them, and further comprising the step of running prediction models using the computerized model and said performance attributes to predict performance characteristics of said communications network.  
(See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, cost and coverage target parameters, and specific transmitters, channel lists, placement options, and antenna systems.

p.123 teaches that "Coverage Prediction mode allows you to specify boundary regions where you would like to see a certain level of received

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signal strength, signal-to-interference ratio, or signal-to-noise ratio, and then it predicts and displays those boundaries as closed contours directly on the drawing".

16. In regards to Claim 8, Site Planner 3.0 teaches the following limitations:

8. The method of claim 7 further comprising the steps of measuring performance data in said physical environment and presenting the measured performance data in said display.  
(See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder modifies the database by writing (overlying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an 'I' in the drawing legend."

17. In regards to Claim 9, Site Planner 3.0 teaches the following limitations:

9. The method of claim 7 further comprising the steps of measuring performance data in said physical environment and comparing results from said prediction models to said measured performance data.  
(See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder modifies the database by writing (overlying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an 'I' in the drawing legend."

18. In regards to Claim 10, Site Planner 3.0 teaches the following limitations:

10. An apparatus for designing and deploying a communications network, comprising:  
a means for providing

(I) a computerized model which represents a physical environment in which a communications network is or will be installed, said computerized model providing a display of at least a portion of said physical environment, and  
(See Site Planner 3.0, especially: pp.7-11)

p.7 teaches that "First, BDM is used to scan in, create, or import drawing blueprints of the building or campus under study."

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(II) performance attributes for a plurality of system components which may be used in said physical environment,  
(See Site Planner 3.0, especially: pp.83-84)

pp.83-84 teach a means for providing performance attributes to base stations.

means for identifying a plurality of system components which may be used in said physical environment;  
(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems.

means for identifying at least one component kit composed of at least two system components of said plurality of system components;  
(See Site Planner 3.0, especially: pp.97-99)

pp.97-99, teach "Manipulating components in the Antenna System".

means for selecting either specific components from said plurality of system components or said at least one component kit for use in said computerized model; and  
(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems and subsystems.

means for representing said selected specific components or said at least two system components of said at least one component kit in said display as part of a communications network.  
(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system

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configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems. Pp.78-89 and 95-104 teach the means for doing so."

19. In regards to Claim 11, Site Planner 3.0 teaches the following limitations:

11. The apparatus of claim 10 further comprising a means for generating a bill of materials containing cost information for said selected specific components utilized in said communications network.

(See Site Planner 3.0, especially: pp.89-91 "Bill of Materials")

Fig.5.9, on p.91, has a field for "Cost(US\$)"

20. In regards to Claim 13, Site Planner 3.0 teaches the following limitations:

13. The apparatus of claim 10 further comprising means for associating performance attributes with said system components; and

(See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, cost and coverage target parameters, and specific transmitters, channel lists, placement options, and antenna systems.

means for running prediction models using the computerized model and said performance attributes to predict performance characteristics of said communications network.

(See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

p.123 teaches that "Coverage Prediction mode allows you to specify boundary regions where you would like to see a certain level of received signal strength, signal-to-interference ratio, or signal-to-noise ratio, and then it predicts and displays those boundaries as closed contours directly on the drawing".

21. In regards to Claim 14, Site Planner 3.0 teaches the following limitations:

14. The apparatus of claim 13 further comprising a means for measuring performance data and presenting the measured performance data in said display.

(See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder

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modifies the database by writing (overlying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an 'I' in the drawing legend."

22. In regards to Claim 15, Site Planner 3.0 teaches the following limitations:

15. The apparatus of claim 13 further comprising a means for comparing measured performance data with results from said prediction models.  
(See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

p.9 teaches that "Once the pre-design phase of Predictor is carried out, and the customer approves the deployment of the wireless network, InFielder is then used to perform rapid field measurements ... InFielder modifies the database by writing (overlying) field measurements upon the predictive contours produced by Predictor. Drawing files modified by InFielder contain an 'I' in the drawing legend."

### ***Claim Rejections - 35 USC § 103***

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. The prior art used for these rejections is as follows:

- a. Rappaport, T., et al. SitePlanner™ 3.0 User's Manual. Wireless Valley Communications. © 1998. (Referred to in this document as "SitePlanner 3.0").
- b. Ahmed, Mansoor. "Use of Topographic Maps with Building Information to Determine Antenna Placement for Radio Detection and Tracking in Urban Environments". MPRG-TR-95-19. Nov. 1995. (Referred to in this document as "Ahmed").

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**25. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over SitePlanner 3.0 in view of Ahmed.**

**26. In regards to Claim 6, Site Planner 3.0 does not expressly teach the following limitations:**

6. The method of claim 1, wherein said display is three dimensional.

Ahmed, on the other hand, does expressly teach the use of a 3D display in propagation prediction using ray tracing. (See p.7, Figure 2.1 – Item “Trace Rays in 3D”, and p.92, Figure 7.2, “Rays traced for receiver 40.”)

It would have been obvious to one of ordinary skill in the art to modify the teachings of SitePlanner 3.0 with those of Ahmed, because doing so enables the prediction of signal strength and power delay profile (see p.6, last paragraph, and p.7, Fig.2.1).

**27. In regards to Claim 12, Site Planner 3.0 does not expressly teach the following limitations:**

12. The apparatus of claim 10 wherein said display is three dimensional.

Ahmed, on the other hand, does expressly teach the use of a 3D display in propagation prediction using ray tracing. (See p.7, Figure 2.1 – Item “Trace Rays in 3D”, and p.92, Figure 7.2, “Rays traced for receiver 40.”)

It would have been obvious to one of ordinary skill in the art to modify the teachings of SitePlanner 3.0 with those of Ahmed, because doing so enables the prediction of signal strength and power delay profile (see p.6, last paragraph, and p.7, Fig.2.1).

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***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks  
Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4<sup>th</sup> floor receptionist's office  
Crystal Park 2  
2121 Crystal Drive  
Arlington, VA

The fax phone number is: (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is: (703) 305-3900.

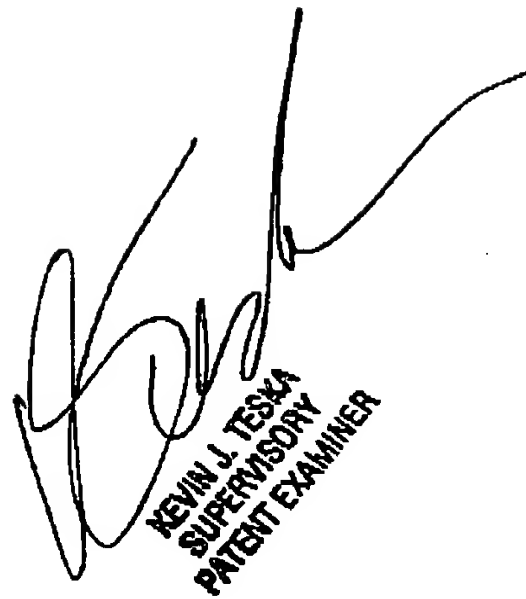
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Ayal I. Sharon

Art Unit 2123

March 5, 2004



KEVIN J. TESKA  
SUPERVISORY  
PATENT EXAMINER

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**REQUIREMENT FOR INFORMATION – 37 C.F.R. § 1.105**

1. Examiner has located several documents that raise issues of inventorship, assignment rights, and on sale activity of the invention disclosed in the instant application. Examiner has also found a discrepancy regarding one of the references provided by the Applicants in an IDS (paper #3). The documents that raise these issues are:
  - a. "SMT Plus: Site Modeling Tool. A Software Tool for Planning Indoor Wireless Systems." © 2001. Printed from <http://www.mprg.org/research/smt/smt.shtml> on 3/5/04. (Referred to in this document as "SMT Plus").
  - b. "MPRG Industrial Affiliate Program." 2001. Printed from <http://www.mprg.org/partnerships/affiliate.shtml> on 3/5/04.
  - c. "Wireless Research Leads to Indoor Planning Tool." EE Connection, Feb. 1997. Printed from <http://www.ecpe.vt.edu/ecenews/feb97/smt.html> on 3/5/04. (Referred to in this document as "EE Connection").
  - d. "VTIP Disclosure No.: 96-013." Virginia Tech Intellectual Properties, Inc. © 1997-2001. Printed from <http://www.vtip.org/licensing/disclosures/96-013.htm> on 3/5/04. (Referred to in this document as "VTIP Disclosure").
  - e. "Communication Products Special Section." EDN Access, Aug. 1, 1996. Printed from <http://www.e-insite.net/ednmag/archives/1996/080196/16df1.htm> on 3/5/04. (Referred to in this document as "EDN Access").

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- f. Panjwani et al., "Interactive Computation of Coverage Regions for Wireless Communication in Multifloored Indoor Environments." IEEE Journal of Selected Areas in Communication, April 1996. pp.420-430. (Referred to in this document as "Panjwani").
  - g. Skidmore et al. "Interactive Coverage Region and System Design Simulation for Wireless Communication Systems in Multifloored Indoor Environments: SMT Plus." 5<sup>th</sup> Int'l Conference on Universal Personal Communications, Sept.29 – Oct.2, 1996. pp.646-650, vol.2. (Referred to in this document as "Skidmore").
  - h. Skidmore et al. "A Comprehensive In-Building and Microcellular Wireless Communication System Design Tool." The Bradley Dept. of Electrical Engineering, Virginia Tech Univ. MPRG-TR-97-13. June 1997. (Referred to in this document as "Skidmore\_2").
  - i. "Scholarly Communications Project". Regarding Master's Thesis of Roger R. Skidmore. Printed from <http://scholar.lib.vt.edu/theses/delayed/etd-61097-104157/etd-title.html> on 3/5/04. (Referred to in this document as "Scholarly Comm. Project").
2. The SMT Plus, Panjwani, and Skidmore documents raise questions of inventorship.

- a. The first page of the SMT Plus document contains the following quotation:

SMT Plus was developed at MPRG in the early 1990s from years of indoor/microcell propagation research at Virginia Tech. It is an early research predecessor to SitePlanner™ Tool Suite, the powerful commercial indoor/microcellular prediction & measurement system

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developed by Wireless Valley Communications, Inc. Please visit the Wireless Valley Communications, Inc. website to learn about the full capabilities of this powerful indoor/microcellular engineering and system management tool suite.

- b. Based on the information in Skidmore and Skidmore\_2, examiner finds that the SMT Plus software reads on the claimed invention (See the accompanying Office Action for more details).
  - c. In the "Developers" section of the SMT Plus document, a total of five faculty members and graduate students are listed as having "contributed to SMT's success." They are: Dr. Theodore Rappaport, Dr. A. Lynn Abbott, Nitin Bhat, Manish Panjwani, and Roger Skidmore. Out of these five individuals, only Dr. Rappaport and Mr. Skidmore are listed as inventors in the instant application.
  - d. Moreover, in the "Publications" section of the SMT Plus document, the Panjwani and Skidmore publications are listed. Both the Panjwani and Skidmore publications list Dr. Abbott as a co-author, yet Dr. Abbott is not listed as a co-inventor in the instant application.
  - e. The Panjwani publication also lists Mr. Panjwani as a co-author, yet he is not listed as a co-inventor in the instant application.
  - f. Clarification of these issues is required.
3. The SMT Plus, VTIP Disclosure, Panjwani, and Skidmore documents raise questions of assignment rights.
- a. In the "Acknowledgement" section of the SMT Plus document, the following groups are thanked for their "contributions to the SMT project":

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- I. MPRG Industrial Affiliate Members
- II. The National Science Foundation
- III. The Office of National Drug Control Policy
- IV. IBM
- V. Grayson Electronics

b. Moreover, the link to "MPRG Industrial Affiliate Members" (Item 3(a)(I) above) in the "Acknowledgement" section of the SMT Plus document leads to the "MPRG Industrial Affiliate Program" document, which lists the following companies as having funded the MPRG in exchange for "provid[ing] an opportunity for industry to profit from MPRG's research, facilities, and personnel":

- I. Analog Devices
- II. Army Research Office
- III. General Dynamics Decision Systems
- IV. Huawei Technologies Company
- V. Lucent Technologies
- VI. Motorola Inc.
- VII. Qualcomm Incorporated
- VIII. Samsung
- IX. SBC Technology Resources, Inc.
- X. DRS Technologies
- XI. Texas Instruments

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- c. The Panjwani document states (at the bottom of p.1, col.1) that "This work was supported by AT&T Global Information Systems."
  - d. The Skidmore document thanks the following organizations for "their support of the SMT Plus project":
    - I. The National Science Foundation
    - II. The Office of National Drug Control Policy
    - III. The MPRG Industrial Affiliates
  - e. Both the Skidmore document, and the VTIP Disclosure document state that AutoDesk's AutoCAD is used to implement the claimed invention.
  - f. None of the above listed companies or U.S. Government agencies are cited in the instant application as having rights to the invention.
  - g. Clarification of these issues is required.
4. The EE Connection and EDN Access documents raise questions of public use and on sale activity prior to the on sale bar date.
- a. The EE Connection document teaches the following:

Research on indoor wireless propagation in the Department's Mobile and Portable Radio Research Group (MPRG) has led to the development of the first commercially available indoor/microcellular Site Modeling Tool. Called SMT Plus, the software helps planners with indoor site selection, system bidding and preliminary wireless system design.
  - b. The date of the EE Connection document, February 1997, is before the on-sale bar date of the claimed invention.
  - c. The EDN Access document (p.2) teaches the following:

Software tool for indoor wireless system

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SMT Plus 1.0 is an interactive software tool for planning, simulating, and installing indoor wireless systems. The program displays signal strength and interference contours on building blueprints for arbitrary base-station placements. Available for DOS, Windows, and a variety of Unix platforms, SMT Plus addresses all major wireless communication standards, including AMPS, IS-136, IS-95, and wireless LAN. \$2500. Virginia Polytechnic Institute and State University, Blacksburg, VA.

- d. The date of the EDN Access document, August 1, 1996, is before the on-sale bar date of the claimed invention.
  - e. Clarification of these issues is required.
5. The Scholarly Comm. Project document raises questions regarding the availability of one of the documents submitted by the Applicants in an IDS (paper #3).
- a. The submitted document in question is Skidmore\_2.
  - b. Applicants declare in an IDS (paper #3, p.13, Item #24) that Skidmore\_2 was "unpublished by Virginia Tech for 2 years after submission."
  - c. The Scholarly Comm. Project teaches (p.1, "Availability" section) the following:

Release the entire work for Virginia Tech access only. After one year release worldwide only with written permission of the student and the advisory committee chair.

- d. The Scholarly Comm. Project teaches (p.2) that:

At the author's request, all materials (PDF files, images, etc.) associated with this ETD are accessible from the Virginia Tech network only.

The author grants Virginia Tech or its agents the right to archive and display their thesis or dissertation in whole or in part in the

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University Libraries in all forms of media, now or hereafter known.  
The author retains all proprietary rights, such as patent rights.

- e. The Scholarly Comm. Project contradicts Applicants' statement in the IDS that Skidmore\_2 was "unpublished by Virginia Tech for 2 years." It appears that the reference was archived and displayed in the Virginia Tech University Libraries immediately after the defense (June 9, 1997).
- f. Clarification of these issues is required.
6. **Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application:**
- Information clarifying the inventorship issues of SMT Plus.
  - Information clarifying the assignment issues of SMT Plus.
  - Information clarifying the on-sale activity issues of SMT Plus.
  - Information clarifying the disclosure history of the Skidmore\_2 reference.
- Applicant is reminded that failure to fully reply to this requirement for information will result in a holding of abandonment.
7. **The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures**

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beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

8. The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.
9. This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks  
Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4<sup>th</sup> floor receptionist's office  
Crystal Park 2  
2121 Crystal Drive

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Arlington, VA

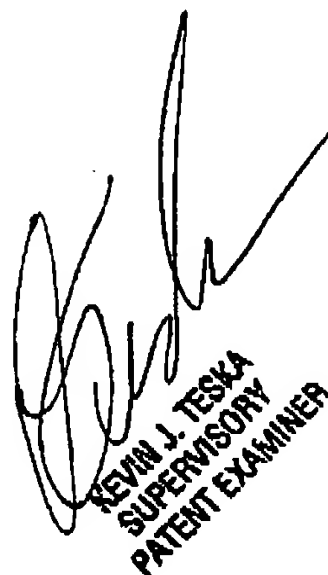
The fax phone number is: (703) 872-9306

Any inquiry of a general nature or relating to the status of this application  
or proceeding should be directed to the receptionist, whose telephone number is:  
(703) 305-3900.

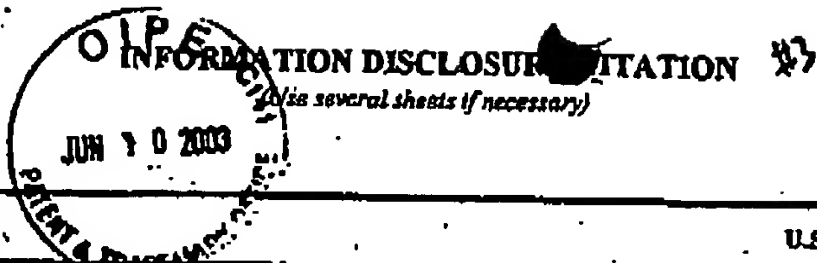
Ayal I. Sharon

Art Unit 2123

August 11, 2004



KEVIN J. TESKA  
SUPERVISORY  
PATENT EXAMINER



02560034	09/633,122
Applicant(s) T. Rappaport et al.	
Filing Date 8/4/00	Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Aysel	1	4,675,147	6-23-87	Schaefer et al.			4-6-83
Aysel	2	4,736,453	4-5-88	Schloemer			12-10-85
Aysel	3	4,885,694	12-5-89	Pray et al.			4-29-87
Aysel	4	5,111,392	5-5-92	Malin			6-9-89
Aysel	5	5,119,307	6-2-92	Blaha et al.			12-22-89
Aysel	6	5,239,487	8-24-93	Horejsi et al.			10-24-90
Aysel	7	5,293,640	3-8-94	Gunnar et al.			
Aysel	8	5,307,261	4-26-94	Maki et al.			6-28-91
Aysel	9	5,337,149	8-9-94	Kozab et al.			11-12-92
Aysel	10	5,339,184	8-16-94	Tang			6-15-92
Aysel	11	5,375,123	12-20-94	Andersson et al.			2-5-93

## FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Fundamental	
						YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Patent Pages, Etc.)


EXAMINER

Aysel Sharon

DATE CONSIDERED

3/5/04

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## INFORMATION DISCLOSURE STATEMENT

JUN 10 2003 (Use several sheets if necessary)

Application Number

02560034A

Application Number

09/633,122

Applicant(s)

T. Rappaport et al.

Filing Date

8/4/00

Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Ayal	12	5,394,522	2-28-95	Sanchez-Frank et al.			9-13-93
Ayal	13	5,450,615	9-12-95	Fortune et al.			12-22-93
Ayal	14	5,458,123	10-17-95	Unger			4-29-94
Ayal	15	5,465,390	11-7-95	Cohen			2-12-93
Ayal	16	5,482,050	1-9-96	Smokoff et al.			2-17-94
Ayal	17	5,485,568	1-16-96	Venable et al.			10-8-93
Ayal	18	5,491,644	2-13-96	Pickering et al.			9-7-93
Ayal	19	5,491,837	2-13-96	Haartsen			3-7-94
Ayal	20	5,493,679	2-20-96	Virgil et al.			10-29-93
Ayal	21	5,515,269	5-7-96	Willis et al.			11-8-93
Ayal	22	5,528,518	6-18-96	Bradshaw et al.			10-25-94

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JUN 11 2003

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## FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
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## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

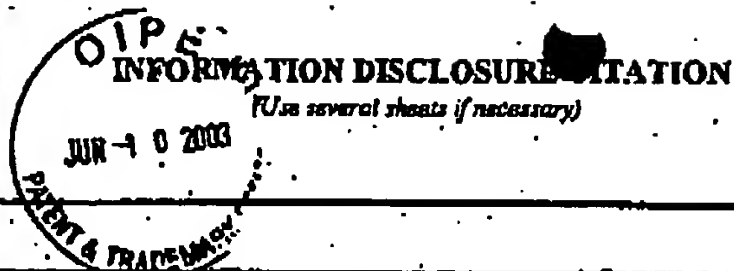

EXAMINER

Ayal Sharon

DATE CONSIDERED

3/5/04

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Docket Number (Optional)

02560034A

Application Number

09/633,122

Applicant(s)

T. Rappaport et al.

Filing Date

8/4/00

Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	SER	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Ayal	23	5,539,665	7-23-96	Lanning et al.			7-25-94
Ayal	24	5,553,312	9-3-96	Gathey et al.			6-20-94
Ayal	25	5,553,620	9-10-96	Snider et al.			5-2-95
Ayal	26	5,555,354	9-10-96	Strasnick et al.			3-23-93
Ayal	27	5,561,841	10-1-96	Markus			
Ayal	28	5,564,070	10-8-96	Want et al.			7-30-93
Ayal	29	5,594,946	1-14-97	Menich et al.			2-28-95
Ayal	30	5,598,532	1-28-97	Liron			10-21-93
Ayal	31	5,625,827	4-29-97	Krause et al.			12-23-94
Ayal	32	5,636,344	6-3-97	Lewis			8-22-91
Ayal	33	5,689,355	11-18-97	Okubo et al.			7-1-96

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## FOREIGN PATENT DOCUMENTS

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## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

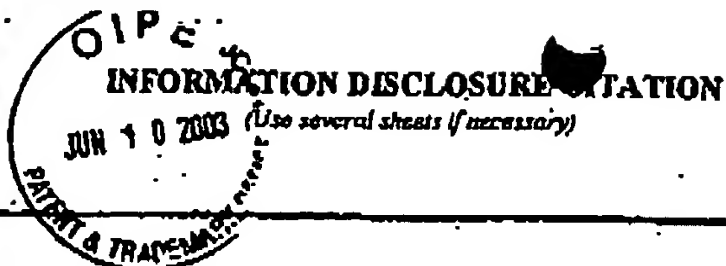

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Docket Number (Optional) 02560034A		Application Number 09/633,122
Applicant(s) T. Rappaport et al.		
Filing Date 8/4/00	Group Art Unit	

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DAYS	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Ayel	34	5,761,093	6-2-98	Urbish et al.			5-8-97
Ayel	35	5,794,128	8-11-98	Brockel et al.			9-20-95
Ayel	36	5,799,154	8-25-98	Kuriyan			6-27-96
Ayel	37	5,809,282	8-15-98	Cooper et al.			6-7-95
Ayel	38	5,815,395	9-29-98	Hart et al.			6-29-95
Ayel	39	5,828,960	10-27-98	Tang et al.			3-31-95
Ayel	40	5,831,610	11-3-98	Tonelli et al.			2-23-96
Ayel	41	5,832,389	11-3-98	Dent			4-3-96
Ayel	42	5,861,887	1-19-99	Butler et al.			12-5-95
Ayel	43	5,867,112	2-2-99	Kost			5-14-91
Ayel	44	5,877,777	3-2-99	Colwell			4-7-97

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## FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translations	
							YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Previous Pages, Etc.)


EXAMINER Ayel Sharon	DATE CONSIDERED 3/5/04
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O I P E  
INFORMATION DISCLOSURE CITATION

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PATENT &amp; TRADEMARK OFFICE

Docket Number (Optional)

02560034A

Application Number

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Applicant(s)

T. Rappaport et al.

Filing Date

8/4/00

Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE, IF APPROPRIATE
Aysel	45	5,878,328	3-2-99	Chawla et al.			12-21-95
Aysel	46	5,907,850	5-25-99	Krause et al.			1-21-97
Aysel	47	5,917,808	6-29-99	Kosbab			1-17-97
Aysel	48	5,923,850	7-13-99	Barronx			6-28-96
Aysel	49	5,926,762	7-20-99	Arpee et al.			5-17-96
Aysel	50	5,940,196	8-17-99	Piehler et al.			5-16-97
Aysel	51	5,945,976	8-31-99	Iwamura et al.			12-10-96
Aysel	52	5,948,055	9-7-99	Pulsipher et al.			8-29-96
Aysel	53	5,949,335	9-7-99	Maynard			4-14-98
Aysel	54	5,949,988	9-7-99	Feisullin et al.			4-3-97
Aysel	55	5,953,669	9-14-99	Stratis et al.			12-11-97

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## FOREIGN PATENT DOCUMENTS

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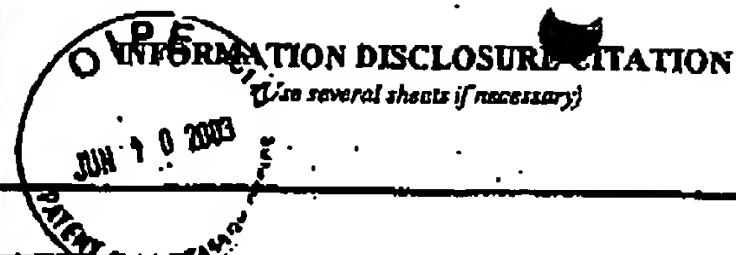

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Applicant(s) T. Rappaport et al.	
Filing Date 8/4/00	Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Ayal	36	5,963,867	10-5-99	Reynolds et al.			8-16-95
Ayal	37	5,970,406	10-19-99	Komara			12-31-96
Ayal	38	5,987,328	11-16-99	Ephremides et al.			4-24-97
Ayal	39	6,006,021	12-21-99	Tognazzini			7-1-96
Ayal	40	6,018,625	1-25-00	Hayhall et al.			8-27-97
Ayal	41	6,021,316	2-1-00	Heiska et al.			
Ayal	42	6,032,105	2-29-00	Lee et al.			7-31-97
Ayal	43	6,038,547	3-14-00	Casto			1-7-98
Ayal	44	6,044,273	3-28-00	Tekinay			12-10-96
Ayal	45	6,058,102	5-2-00	Drysdale et al.			11-6-98
Ayal	46	6,058,262	5-2-00	Kawas et al.			4-18-97

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## FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
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EXAMINER Ayal Sharon	DATE CONSIDERED 3/5/04
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Docket Number (Optional)

02560034A

Application Number

09/633,122

Applicant(s)

T. Rappaport et al.

Filing Date

8/4/00

Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Ayol	67	6,059,842	5-9-00	Damarot et al.			4-14-98
Ayol	68	6,061,722	5-9-00	Lipa et al.			12-23-96
Ayol	69	6,075,541	6-13-00	Maclinovsky			11-7-97
Ayol	70	6,088,522	7-11-00	Lee et al.			7-31-97
Ayol	71	6,104,699	8-15-00	Holender et al.			
Ayol	72	6,108,309	8-22-00	Cobue et al.			12-8-97
Ayol	73	6,111,857	8-29-00	Soliman et al.			9-11-97
Ayol	74	6,122,083	9-19-00	Ohta et al.			10-3-94
Ayol	75	6,148,010	11-14-00	Sutton et al.			6-24-98
Ayol	76	6,199,032	3-6-01	Anderson			7-22-98
Ayol	77	6,204,813	3-20-01	Wadell et al.			2-20-98

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JUN 11 2003

Technology Center 2100

## FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translating	
						YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)


EXAMINER

Ayol Sharon

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3/5/04

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JUN 10 2003

SECRET NUMBER (Optional)

02560034

Application Number

09/633,122

Applicant(s)

T. Rappaport et al.

Filing Date

8/4/00

Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILED DATE IF APPROPRIATE
Aysel	78	6,208,833	3-27-01	Preschutti et al.			6-24-97
Aysel	79	6,229,540	5-8-01	Tonelli et al.			10-13-98
Aysel	80	6,253,086	6-26-01	Parantainen et al.			3-25-99
Aysel	81	6,285,377	9-4-01	Greenbaum et al.			6-26-97
Aysel	82	6,289,203	9-11-01	Smith et al.			2-25-98
Aysel	83	6,317,599	11-13-01	Rappaport et al.			5-26-99
Aysel	84	6,326,987	12-4-01	Alexander			12-19-00
Aysel	85	6,330,005	12-11-01	Tonelli et al.			10-6-99
Aysel	86	6,311,144	10-30-01	Abu El Ata			7-31-98
Aysel	87	6,337,688	1-8-02	Berstis			1-29-99
Aysel	88	6,338,031	1-8-02	Lee et al.			9-23-99

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JUN 11 2003

Technology Center 2100

## FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)


EXAMINER

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DATE CONSIDERED

3/5/04

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02560034AA

Application Number

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Applicant(s)

T. Rappaport et al.

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Group Art Unit

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Agel	89	6,356,758	3-12-02	Almeida et al.			12-31-97
Agel	90	6,393,432	5-21-02	Flansburg et al.			6-2-99
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Agel	92	6,442,507	8-27-02	Skidmore et al.			12-29-98
Agel	93	6,470,195	10-22-02	Meyer			10-31-00
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## FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO

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## INFORMATION DISCLOSURE CITATION

02560034

09/633,122

Applicant(s)

T. Rappaport et al.

Filing Date

8/4/00

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EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Appl	100	6,085,315	7-4-00	Djoko et al.			
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also form PTO-1449)

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Patent and Trademark Office \* U.S. DEPARTMENT OF COMMERCE

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## INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)

02560034

Application Number

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Applicant(s)

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## INFORMATION DISCLOSURE CITATION

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Docket Number (Optional)

02568034AA

Application Number

09/633,122

Applicant(s)

T. Rappaport et al.

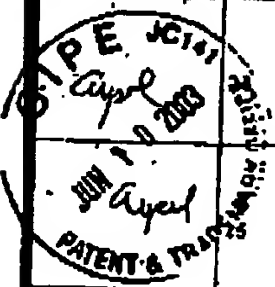
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## INFORMATION DISCLOSURE CITATION

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Applicant(s)

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Company Web Page "Actix" www.actix.com product name: E-NOS (now E-AMS)

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Company Web Page "Agilent" www.agilent.com product name: OPAS32

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Company Web Page "Agilent" www.agilent.com product name: Wizard

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Company Web Page "Comarco" www.edx.com product name: SignalPro

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Company Web Page "ComOpt" www.comopt.com product name: CellOpt AFP

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